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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,558	01/19/2001	Quaced Motiwala	PA000103	1085

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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

LIU, SHUWANG

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 07/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

54

Office Action Summary	Application No.	Applicant(s)	
	09/766,558	MOTIWALA ET AL.	
	Examiner	Art Unit	
	Shuwang Liu	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1-43 are objected to because of the following informalities:

Insert - -and- - between the last two limitations for all appropriate claims, for example, insert - -and- - after "symbols;" in line 6 of claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 2, 5, 6, 9-17, 20, 23-27, 30, 31 and 34-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Gitlin et al. (US 6,064,662, see IDS, paper #4).

Art Unit: 2634

As shown in figures 7 and 8, Gitlin et al. discloses a communication system, a method for processing a frame of data, comprising:

(1) regarding claim 1:

partitioning said frame of data into at least a first and second portions of data symbols (S0 and S1);

assigning a first channel element to demodulate data symbols of said first portion of data symbols (column 7, line 27-line 58); and

assigning a second channel element to demodulate data symbols of said second portion of data symbols (column 7, line 27-line 58).

(2) regarding claims 2, 20, and 25:

demodulating said first and second portions of data symbols by correspondingly said first and second channel elements (column 7, line 27-line 58).

(3) regarding claim 5:

As shown in figures 7 and 8, Gitlin et al. discloses a communication system, a method for processing a frame of data, comprising:

partitioning said frame of data into a plurality of portions of data symbols (S0 and S1);

assigning a plurality of channel elements to demodulate data symbols of correspondingly said plurality of portions of data symbols (column 7, line 27-line 58)

(4) regarding claim 6:

demodulating said plurality of portions of data symbols by correspondingly said

plurality of assigned channel elements (column 7, line 27-line 58).

(5) regarding claim 12:

As shown in figures 7 and 8, Gitlin et al. discloses a communication system, a method for processing a plurality of frames of data, comprising:

partitioning each of said plurality of frames of data into a plurality of portions of data symbols (S0 and S1);

assigning a plurality of channel elements to each of said plurality of frames of data to demodulate data symbols of correspondingly said plurality of portions of data symbols of each of said plurality of frames of data (column 7, line 27-line 58).

(6) regarding claim 17:

receiving said plurality of frames of data via a radio frequency front end (column 7, lines 3-15).

(7) regarding claims 25 and 30:

As shown in figures 7 and 8, Gitlin et al. discloses a communication system, an apparatus for processing a frame of data, comprising:

means for partitioning said frame of data into a plurality of portions of data symbols (S0 and S1);

means for assigning a plurality of channel elements to demodulate data symbols of correspondingly said plurality of portions of data symbols (column 7, line 27-line 58).

(8) regarding claim 31:

Art Unit: 2634

means for demodulating said plurality of portions of data symbols by correspondingly said plurality of assigned channel elements (column 7, line 27-line 58).

(9) regarding claim 36:

As shown in figures 7 and 8, Gitlin et al. discloses a communication system, an apparatus for processing a plurality of frames of data, comprising:

means for partitioning each of said plurality of frames of data into a plurality of portions of data symbols (s0 and S1);

means for assigning a plurality of channel elements to each of said plurality of frames of data to demodulate data symbols of correspondingly said plurality of portions of data symbols of each of said plurality of frames of data (column 7, line 27-line 58).

(10) regarding claim 40:

means for demodulating the data symbols in each of said plurality of portions of data symbols of each of said plurality of frames of data correspondingly by said plurality of assigned channel elements (column 7, line 27-line 58).

(11) regarding claim 41:

means for receiving said plurality of frames of data via a radio frequency front end (column 7, lines 3-15).

(12) regarding claims 9-11, 13-15, 23, 24, 26, 27, 34, 35, 37-39:

wherein the number of said plurality of portions of data symbols is based on a data rate of data symbols of said frame of data as recited in claims (see figure 4).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 7, 8, 18, 19, 21, 22, 28, 29, 32, 33, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitlin et al. (US 6,064,662) in view of Kawable (EP0998052).

Gitlin et al. discloses all of the subject matter as described above except for specifically teaching,

(1) regarding claims 3, 7, 18, 21, 28, 32 and 42, receiving said frame of data via a radio frequency receiver front end; correlating with at least a data symbol in said frame of data in accordance with timing of at least one assigned finger; and using a result of said correlating in said first and second channel elements for said demodulating.

Kawable, in the same field of endeavor, teaches a radio frequency receiver front end (201), correlating (208) in accordance with timing of at least one assigned finger and demodulating (215, 216 and 217) as recited in claims.

It is well known that the CDMA system must have the front end, correlator and demodulator in order to recover the received information. Therefore, it would have

Art Unit: 2634

been obvious to one of ordinary skill in the art at the time of the invention to have the basic elements, such as the front end, correlator and demodulation, as taught by Kawable et al. in the receiver of Gitlin et al. in order to allow the receiver to demodulate spread spectrum signal with high data rate and bandwidth efficient.

(2) regarding claims 4, 8, 19, 22, 29, 33 and 43, writing to, and subsequently reading from, demodulated data symbols from said first and second channel elements, a RAM in accordance with a deinterleaving function in said communication system.

Kawable, in the same field of endeavor, teaches writing to (215), and subsequently reading from (215), demodulated data symbols from said first and second channel elements, a RAM (215 and 301) in accordance with a deinterleaving function in said communication system.

It is desirable to reduce hardware gate size by using Ram to perform deinterleaving function. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the RAM as taught by Kawable et al. in the receiver of Gitlin et al. in order to reduce the cost and hardware gate size for demodulating spread spectrum signal with high data rate and bandwidth efficient.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu
Primary Examiner
Art Unit 2634

June 27, 2003